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1. A method for isolating fetal cells from maternal blood, comprising

performing, on a sample of maternal blood having a size of from 0.5 to 40 ml, from which at the most 50 % of the maternal nucleated cells thereof have been removed, and/or at the most 50 % of the maternal anucleated cells have been removed,

selective labelling of fetal cells in the maternal blood sample,
identifying the selectively labelled fetal cells by scanning from 0.5 to 40 ml of the maternal blood sample, and

specifically isolating substantially only the selectively labelled fetal cells.

2. The method according to claim 1, wherein the selectively labelled cells are identified by scanning with a scanning rate of from 0.1 m/sec to 10 m/sec.

3. The method according to claim 1, wherein at the most 15 % of the maternal cells thereof have been removed.

4. The method according to claim 1, wherein at the most 10 % of the maternal cells thereof have been removed.

5. The method according to claim 1, wherein at the most 5 % of the maternal cells thereof have been removed.

6. The method according to claim 1, wherein at the most 2.5 % of the maternal cells thereof have been removed.

7. The method according to claim 1, wherein at the most 1% of the maternal cells thereof have been removed.

8. The method according to claim 1, wherein substantially none of the maternal cells have been removed from the sample.

9. The method according to claim 1, wherein at the most 20 % of the maternal nucleat d blood cells thereof have been removed.

10. The method according to claim 1, wherein at the most 20 % of the anucleated red blood cells thereof have been removed.

11. The method according to the claim 1, wherein substantially none of the anucleated blood cells have been removed from the sample.

12. The method according to claim 1, wherein at the most 20% of the anucleated red blood cells have been removed from the sample, and at the most 20% of the nucleated blood cells have been removed from the sample.

13. (amended) The method according to claim 1, wherein the maternal blood sample is diluted before labelling or identification of the fetal cells.

14. (amended) The method according to claim 1, wherein the selective labelling is based on hybridisation of a probe to m-RNA selectively expressed by fetal cells.

15. The method according to claim 14, wherein the m-RNA is m-RNA coding for a protein selected from the group consisting of embryonic hemoglobin, such as epsilon globin chains and zeta globin chains, and fetal hemoglobin, such as gamma globin chains, and alpha globin chains.

16. (amended) The method according to claim 14, wherein the hybridisation probe is directly labelled by having fluorochromes covalently attached thereto.

17. (amended) The method according to claim 1, wherein the selective labelling is based on an antigen-antibody reaction with a protein selectively produced by fetal cells.

18. The method according to claim 17, wherein the protein is a protein selected from the group consisting f embroynic hemoglobin, such as epsilon globin chains and

19. (amended) The method according to claim 17, wherein the antibody is selected from anti epsilon (ε)antibodies, such as monoclonal unlabelled antibodies, and monoclonal fluorochrome labeled antibodies, anti zeta (ζ) antibodies, such as monoclonal unlabelled antibodies, monoclonal biotin labelled antibodies,

monoclonal fluorochrome labeled antibodies, and fluorochrome labeled antibodies, anti gamma (γ) antibodies, such as polyclonal (sheep) antibodies, such as monoclonal unlabelled antibodies, monoclonal biotin labelled antibodies, monoclonal fluorochrome labeled antibodies, and fluorochrome labeled antibodies , anti alpha (α) antibodies and anti beta (β) antibodies.

20. (amended) The method according to claim 1, wherein two or more selective labellings are performed to enhance the probability of identifying the fetal cells in the sample.

21. The method according to claim 20, wherein a labelling with a hybridisation probe is combined with a antigen-antibody labelling.

22. (amended) The method according to claim 1, wherein the identification of the selectively labelled fetal cells is taking place after spreading the blood sample on a solid surface and detecting labelled cells on the surface.

23. The method according to claim 22 wherein the position of detected labelled cells on the surface is recorded.

24. The method according to claim 23, wherein the detected cells the position of which has been recorded are collected.

25. A method of diagnosing a disease in a fetus comprising

obtaining a blood sample having a size of from 0.5 to 40 ml from the woman pregnant with said fetus, whereby at most 50 % of the maternal nucleated cells have been removed and/or at most 50 % of the maternal anucleated cells have been removed from said blood sample,

selective labelling the fetal cells in the maternal blood sample,

identifying the selectively labelled fetal cells, by scanning from 0.5 to 40 ml of the maternal blood sample,

specifically labelling with at least one disease marker the identified fetal cells for diseases, and identifying specifically labelled cells.

26. The method according to claim 25, wherein the fetal cells are isolated before specifically labelling the fetal cells with at least one disease marker.

27. The method according to claim 25, wherein the disease is a genetic disease and/or a chromosome abnormality.

28. The method according to claim 27, wherein the disease and/or chromosome abnormality is cystic fibrosis, hemophilia, muscular dystrophy, Down' syndrome, Klinefelter, Turner' syndrome.